IN THE SPECIFICATION:

Please amend paragraph **[0022]** as indicated below:

[0022] Figure 1 is a side view of an exemplary bucky paper 12 as may be used in accord with the various embodiments of the present invention. In Figure 1, the carbon nanotubes 19 of the bucky paper 12 can be clearly seen in both the regular side view and the enlarged view provided therein. As is visible, the numerous carbon nanotubes 19 comprising the bucky paper may be intermingled amongst themselves and may be oriented in various positions. The unstructured orientation of the carbon nanotubes provides for an irregular exterior surface of the bucky paper. The unstructured orientation of the carbon nanotubes 19 also defines voids and ~~interstities~~ interstices throughout the bucky paper 19. These voids and ~~interstities~~ interstices vary in size and may allow materials smaller than the spaces they create to pass through the bucky paper. Moreover, while the bucky paper 19 is shown in a planar orientation, it may be formed in a curve or other orientation as described below. The bucky paper may be made in various shapes and sizes including polygons of uniform or varying thicknesses. By changing the thickness, shape or density of the bucky paper alone or in combination, its rigidity and flexibility may be modified.

Please amend paragraph **[0025]** as indicated below:

[0025] The bucky paper 22 in this embodiment may be coupled to the stent 20 and its struts 21 through various methods and techniques. These techniques, some of which are described in greater detail below, may include, mechanically attaching the bucky paper to the stent 20 (e.g., clamping, sewing), ~~glueing~~ gluing the bucky paper 22 to the stent 20, forming the bucky paper 22 around the stent 20, and directly depositing the bucky paper 22 onto the stent 20. During some of these forming techniques, the bucky paper 22 will not only be positioned on the stent strut face 23 but may, also, be positioned on other surfaces of the stent strut.

Please amend paragraph **[0028]** as indicated below:

[0028] As discussed in greater detail below, in various alternative embodiments of the present invention, therapeutic may be coupled to the bucky paper, may be placed between layers of the bucky paper, and may by placed behind the bucky paper between it and the medical device that the bucky paper covers. In so doing, therapeutic may be delivered to a target site immediately upon the positioning of the bucky paper at the target site, over a period of time or some combination of the two. In an alternative embodiment, and as described below, when layers of bucky paper are clamped to the various cells of the stent 20, nanoparticles or ~~micellas~~

micellae carrying Taxol or other therapeutics may be placed between the layers of the bucky paper in order to deliver the Taxol or other therapeutic to the target site.

Please amend paragraph **[0029]** as indicated below:

[0029] [0029] Preferred medical devices for use in conjunction with the present invention include catheters, vascular catheters, balloon catheters, guide wires, balloons, filters (e.g., vena cava filters and distal protection filters), vascular stents (including covered stents such as PTFE (~~poltetrafluoroethylene~~ polytetrafluoro-ethylene)-covered stents), stent grafts, cerebral stents, cerebral aneurysm filler coils (including GDC (~~Guglilmi~~ Guglielmi detachable coils) and metal coils), vascular grafts, myocardial plugs, pacemakers, pacemaker leads, heart valves and intraluminal paving systems, filterwires, ~~veinous~~ venous valves, bifurcation stents, aortic stents and, in essence, all devices that can be utilized in the vascular system or the ~~prostrate~~ prostate urinary tract bile duct.

Please amend paragraph **[0034]** as indicated below:

[0034] Figure 5 is a cross-section of a wall 51 of an implant system 50 in accord with another alternative embodiment of the present invention. In this embodiment, the implant 50 is covered with bucky paper 52. The bucky paper 52 contains a therapeutic 53 and is in direct contact with the implant wall 51. The therapeutics that may be used in this embodiment and others are numerous and include pharmaceutically active compounds, nucleic acids with and without carrier vectors such as lipids, compacting agents (such as histones), viruses (such as adenovirus, ~~andenoassociated~~ adenoassociated virus, retrovirus, lentivirus and a-virus), polymers, hyaluronic acid, proteins, cells and the like, with or without targeting sequences.

Please amend paragraph **[0035]** as indicated below:

[0035] Other examples of therapeutic agents used in conjunction with the present invention include, for example, pharmaceutically active compounds, proteins, cells, oligonucleotides, ribozymes, anti-sense oligonucleotides, DNA compacting agents, gene/vector systems (i.e., any vehicle that allows for the uptake and expression of nucleic acids), nucleic acids (including, for example, recombinant nucleic acids; naked DNA, cDNA, RNA; genomic DNA, cDNA or RNA in a non-infectious vector or in a viral vector and which further may have attached peptide targeting sequences; antisense nucleic acid (RNA or DNA); and DNA chimeras which include gene sequences and encoding for ferry proteins such as membrane translocating sequences ("MTS") and herpes simplex virus-1 ("VP22")), and ~~viral, liposomes~~ viral liposomes and cationic and anionic polymers and neutral polymers that are selected from a number of types depending on the desired application.

Please amend paragraph **[0037]** as indicated below:

[0037] Non-limiting examples of biologically active solutes include anti-thrombogenic agents such as heparin, heparin derivatives, urokinase, and PPACK (dextrophenylalanine proline arginine chloromethylketone); antioxidants such as probucol and retinoic acid; angiogenic and anti-angiogenic agents and factors; anti-proliferative agents such as enoxaprin, angiopeptin, rapamycin, angiopeptin, monoclonal antibodies capable of blocking smooth muscle cell proliferation, hirudin, and acetylsalicylic acid; anti-inflammatory agents such as dexamethasone, prednisolone, corticosterone, budesonide, estrogen, sulfasalazine, acetyl salicylic acid, and mesalamine; calcium entry blockers such as verapamil, diltiazem and nifedipine; antineoplastic / antiproliferative / anti-mitotic agents such as paclitaxel, 5-fluorouracil, methotrexate, doxorubicin, daunorubicin, cyclosporine, cisplatin, vinblastine, vincristine, epothilones, endostatin, angiostatin and thymidine kinase inhibitors; antimicrobials such as triclosan, cephalosporins, aminoglycosides, and nitrofurantoin; anesthetic agents such as lidocaine, bupivacaine, and ropivacaine; nitric oxide (NO) donors such as linsidomine, molsidomine, L-arginine, NO-protein adducts, NO-carbohydrate adducts, polymeric or oligomeric NO adducts; anti-coagulants such as D-Phe-Pro-Arg chloromethyl ketone, an RGD peptide-containing compound, heparin, antithrombin compounds, platelet receptor antagonists, anti-thrombin antibodies, anti-platelet receptor antibodies, enoxaparin, hirudin, Warfarin sodium, Dicumarol, aspirin, prostaglandin inhibitors, platelet inhibitors and tick antiplatelet factors; vascular cell growth ~~promotors~~ promoters such as growth factors, growth factor receptor antagonists, transcriptional activators, and translational ~~promotors~~ promoters; vascular cell growth inhibitors such as growth factor inhibitors, growth factor receptor antagonists, transcriptional repressors, translational repressors, replication inhibitors, inhibitory antibodies, antibodies directed against growth factors, antibodies recognizing receptors on endothelial progenitor cells, proteins of the tetraspanin family, such as CD9 Beta-1 and Beta-3 integrins, CD63, CD81, FcgammaRII, bifunctional molecules consisting of a growth factor and a cytotoxin, bifunctional molecules consisting of an antibody and a cytotoxin; cholesterol-lowering agents; vasodilating agents; agents which interfere with endogenous ~~vasoactive~~ vasoactive mechanisms; survival genes which protect against cell death, such as anti-apoptotic Bcl-2 family factors and Akt kinase; and combinations thereof. Cells can be of human origin (autologous or allogenic) or from an animal source (xenogeneic), genetically engineered if desired to deliver proteins of interest at the insertion site.

Please amend paragraph **[0039]** as indicated below:

[0039] Bucky paper is a ~~hydrophibic~~ hydrophobic substance. Consequently, when hydrophobic agents, such as placitaxel, are used as therapeutics, a simple solution to treat the bucky paper with the therapeutic would be to dip the bucky paper (and the device, if the bucky paper is coupled to a medical device) in a solution containing the therapeutic agent. Now carried by the bucky paper, the therapeutic may be partially or completely released from it when the bucky paper is positioned at a target site.

Please amend paragraph **[0040]** as indicated below:

[0040] Comparatively, when hydrophylic therapeutics are used, they may first be encapsulated in ~~lipisomes~~ liposomes or polysaccharides that are subsequently embedded into the bucky paper. Alternatively, the ~~hydrophylic~~ hydrophilic therapeutics may be ~~crystalized~~ crystallized or frozen and then placed within the bucky paper. Still further, microtubes, loaded with therapeutics, may also be embedded in the bucky paper for subsequent release and delivery.

Please amend paragraph **[0047]** as indicated below:

[0047] The carriers and coatings used in the present invention may be hydrophilic or hydrophobic, and may be selected from the group consisting of polycarboxylic acids, cellulosic polymers, including cellulose acetate and cellulose nitrate, gelatin, polyvinylpyrrolidone, cross-linked polyvinylpyrrolidone, polyanhydrides including maleic anhydride polymers, polyamides, polyvinyl alcohols, copolymers of vinyl monomers such as EVA, polyvinyl ethers, polyvinyl aromatics, polyethylene oxides, glycosaminoglycans, polysaccharides, polyesters including polyethylene terephthalate, polyacrylamides, polyethers, polyether sulfone, polycarbonate, polyalkylenes including polypropylene, polyethylene and high molecular weight polyethylene, halogenated polyalkylenes including polytetrafluoroethylene, polyurethanes, polyorthoesters, proteins, polypeptides, silicones, siloxane polymers, polylactic acid, polyglycolic acid, polycaprolactone, polyhydroxybutyrate valerate and blends and copolymers thereof as well as other biodegradable, bioabsorbable, and biostable polymers and copolymers. Coatings from polymer dispersions such as polyurethane dispersions ~~(BAYHDROL®g, etc.)~~ (BAYHYDROL®, etc.) and acrylic latex dispersions are also within the scope of the present invention. The polymer may be a protein polymer, fibrin, collagen and derivatives thereof, polysaccharides such as celluloses, starches, dextrans, alginates and derivatives of these polysaccharides, an extracellular matrix component, hyaluronic acid, or another biologic agent or a suitable mixture of any of these, for example. In one embodiment of the invention, the preferred polymer is polyacrylic acid, available as HYDROPLUS® (Boston Scientific Corporation, Natick, Mass.), and described in U.S. Pat. No. 5,091,205. U.S. Patent No. 5,091,205 describes medical devices coated with one or more polyisocyanates such that the devices become instantly lubricious when

exposed to body fluids. In another preferred embodiment of the invention, the polymer is a copolymer of polylactic acid and polycaprolactone.

Please amend paragraph **[0048]** as indicated below:

[0048] Figure 8 is a cross-section of another alternative embodiment of the present invention. The implant system 80 of Figure 8 contains an implant 81, therapeutic coating 84, a delivery barrier 85, and PE anchors 86. The barrier may be made from a biodegradable layer like poly vinyl alcohol or PLLA or a ~~polysacharide~~ polysaccharide or another multi-layer polyelectrolyte composition. It could also be made from a stable porous polymer like a ~~polyeutherane~~ polyurethane or SIBS. The PE anchors 86 may be formed directly into the bucky paper 82 and may protrude from it. The PE anchors 86 may be used, as is shown in Figure 8, to secure the bucky paper 82, through the therapeutic coating 84, to the medical implant 81. This securement may be done by melting the PE anchors. In addition to using the coating 84 to control the release of therapeutic from the implant system 81, the delivery barrier 85 may also be used to perform this function. This delivery barrier 85 may be comprised of materials that affect the delivery of the therapeutic in the coating 84. Alternatively, the barrier 85 may simply dissolve over time, thereby providing for the release of therapeutic from the medical implant once the barrier dissolves. The PE anchors 86 formed in the bucky paper 82 of this embodiment may also be used, in alternative embodiments, to attach the bucky paper 82 directly to the target site or to other bucky paper in order to form layers of bucky paper.

Please amend paragraph **[0050]** as indicated below:

[0050] Figure 9 is an alternative embodiment of the present invention. In Figure 9, the implant system 90 includes layers of bucky paper 92 positioned on the inside and outside surfaces of the implant strut 91. These layers of bucky paper 92 are positioned on top of therapeutic layers 94. In this embodiment, the outer most bucky paper layer may be untreated while the inner layer of bucky paper may be treated. This treatment can include a plasma process to create chemical anchors such as ~~hydrophylic~~ hydrophilic and carboxylic groups to which one can attach therapeutics.

Please amend paragraph **[0050]** as indicated below:

[0054] Figure 13 is a sectional view of an implant system 130 in accord with an alternative embodiment of the present invention. In this embodiment, a release control coating 138 has been placed on top of the bucky paper 132, which is in turn positioned on top of a therapeutic carrier 134. This carrier 134 may include microtubes, ceramic nano-particles, and ~~lipisome~~ liposome microparticles. Furthermore, the therapeutic may be encapsulated in biodegradable nano- or

microparticles by using poly-electrolyte multilayers. These particles may be designed to open up upon exposure to different phs, changes in osmotic pressure, and changes in external pressure, heat or light.